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IS 15863 (2009): Cotton seed delinting machinery - Inclined flight belt conveyor [FAD 20: Agriculture and Food Processing Equipments]

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Indian Standard

COTTON SEED DELINTING MACHINERY — INCLINED FLIGHT BELT CONVEYOR — SPECIFICATION

ICS 65.060

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NEW DELHI 110002

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Agriculture and Food Processing Equipments Sectional Committee, FAD 20

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Agriculture and Food Processing Equipments Sectional Committee had been approved by the Food and Agriculture Division Council.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the results of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

COTTON SEED DELINTING MACHINERY — INCLINED FLIGHT BELT CONVEYOR — SPECIFICATION

1 SCOPE

This standard specifies material, performance and constructional and other requirements of inclined flight belt conveyor.

2 REFERENCES

The following standards contain provisions, which through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

IS No.	*Title*
1364	Hexagon head bolts, screws and nuts of product grades A and B:
(Part 1) : 2002/ ISO 4014 : 1999	Hexagon head bolts (size range M 1.6 to M 64) (*fourth revision*)
(Part 2) : 2002 ISO 4017 : 1999	Hexagon head screws (size range M 1.6 to M 64) (*fourth revision*)
(Part 3) : 2002/ ISO 4032 : 1999	Hexagon nuts, style 1 (size range M 1.6 to M 64) (*fourth revision*)
(Part 4) : 2003/ ISO 4035 : 1999	Hexagon thin nuts (chamfered) (size range M 1.6 to M 64) (*fourth revision*)
(Part 5) : 2002/ ISO 4036 : 1999	Hexagon thin nuts - Product grade B (unchamfered) (size range M 1.6 to M 10) (*fourth revision*)
(Part 6) : 2002/ ISO 4033 : 1999	Hexagon nuts, style 2
2062 : 2006	Hot rolled low, medium and high tensile structural steel (*sixth revision*)
5624 : 1993	Foundation bolts – Specification (*first revision*)

3 TERMINOLOGY

For the purpose of this standard following definitions shall apply.

3.1 Body — The body of inclined flight belt conveyor is made out of MS angles supported with MS channels and angles to rest on the ground with wheel to roll.

3.2 Inclined Flight Belt Conveyor — This is made of mild steel coated with FRP lining 2 mm thick fitted with imported polyester cord PVC coated belt with flights at the intervals 10 cm having frill walls on both sides covered with transparent acrylic sheet. Vertical delivery height as per site requirement with adjustable inclination to horizontal. Complete with feeding hopper with 1 000 mm horizontal length-feeding belt and telescopic discharge pipe with all moving parts covered and guarded properly. The entire length of conveyor should be covered with transparent acrylic sheet fitted with in mild steel frame.

Mild steel hard chrome plated drives and tension roller mounted on EN-8 shaft and SKF bearing, MS leg structure made of hollow tubular/angular section. The idler roller and press roller will be made of special plastic suitable for corrosive atmosphere for supporting the belt from top and return side. All MS plates will be painted by rubberized chlorinated corrosion resistant paint. Feeding hopper made out of MS sheet coated with FRP lining 2 mm thick and reinforced with angle channel FRP coated with support from ground installed on the flight belt.

4 MATERIALS

The material of construction of inclined flight belt conveyor shall be given in the references. The material may conform to the relevant Indian Standards given in Table 1.

Table 1 Material of Construction of Inclined Flight Belt Conveyor

Sl No.	Component	Material	Ref to IS
(1)	(2)	(3)	(4)
i)	Body	MS sheet	2062
ii)	Belt	PVC rubber	—
iii)	Chain	Steel	—
iv)	Sprocket	Carbon steel	—
v)	Acrylic sheet	—	—
vi)	Hopper	Mild steel	—
vii)	Foundation bolt	Steel	5624
viii)	Hexa nut and bolt	Steel	1364 (Parts 1 to 6)
ix)	Rollers	PVC	—

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5 PERFORMANCE REQUIREMENTS

When tested with the method, the inclined flight belt conveyor shall conform to the requirement in Annex A.

6 CONSTRUCTIONAL REQUIREMENT

The sheets, channels and angels used in the construction of inclined flight belt conveyor shall depend on the capacity of the machine. They shall vary from 3 mm, 5 mm, 8 mm and angles 25 mm × 25 mm, 35 mm × 35 mm, 50 mm × 50 mm. The single piece molded PVC cord rubberized belt with slats at 10 cm intervals and frill walls 10 cm height should be provided with conveyor.

7 OTHER REQUIREMENT

7.1 The necessary power drive shall be provided.

7.2 The construction shall be such as to help easy repairs and maintenance.

7.3 The machine shall be provided with easy facilities for adjustments.

7.4 All the joints and connections should be tight and there are no leakages of seed.

7.5 All angles, hoppers should be coated with 2 mm thick FRP lining.

7.6 The PVC rollers with SRF bearings have to be provided to support belt at 30 cm intervals.

8 WORKMANSHIP AND FINISH

8.1 The components of the machine shall be free from cracks and other visual defects.

8.2 The welding and joints, if any shall not be porous and shall be smooth.

8.3 The corrosion preventing coating shall be provided to the body such as FRP lining 2 mm thick.

8.4 The control and adjustment provided shall be easy and operating smoothly.

9 MARKING AND PACKING

9.1 Marking

Each inclined flight belt conveyor shall be marked with the following particulars:

a) Manufacturer's name and address;
b) Type and model number;
c) Power rating;
d) Drive details;
e) Batch or code number, if any; and
f) Year of manufacture.

9.1.1 Each inclined flight belt conveyor may also be marked with the overall size and approximate weight of machine or this information may be given in the catalogue supplied by the manufacturer.

9.2 BIS Certification Marking

Each inclined flight belt conveyor may also be marked with the Standard Mark.

9.2.1 The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act*, 1986 and the Rules and Regulations made thereunder. The details of conditions under which the license for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

9.3 Packing

The packing of inclined flight belt conveyor shall be done as agreed to between the supplier and the purchaser.

ANNEX A

(*Clause* 5)

METHODS OF TEST FOR INCLINED FLIGHT BELT CONVEYOR

A-1 RUNNING IN AND PRELIMINARY ADJUSTMENTS

A-1.1 The inclined flight belt conveyor shall be installed on levelled preferably on hard surface.

A-1.2 The inclined flight belt conveyor shall be run in for about 30 min before commencing the test. All the adjustments shall be carried out in accordance with the recommendations of the manufacturers.

A-2 TEST AT NO LOAD

A-2.1 After running in is over the inclined flight belt conveyor shall be run at 'No load' for 10 min at the specific speed. During and after the no load run the visual observation at the inclined flight belt conveyor shall not show the following:

a) Presence of any marked vibration during the operation,

b) Presence of undue knocking sound or rattling sound,

c) Any marked unusual wear or slackness in any component, and

d) Any marked leakage.

A-3 TEST AT LOAD

The inclined flight belt conveyor shall be operated at its input capacity specified by the manufacturer incorporating best combination of adjustment for a period of 30 min.

A-4 LONG RUN TEST

The inclined flight belt conveyor shall be operated for a minimum of 20 h duration. During and after the operation no break down, defects and leakage shall develop in the inclined flight belt conveyor.

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Amendments Issued Since Publication

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